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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,152	10/14/2003	Mark F. Sonnenschein	61623B	4793

109 7590 06/23/2005

THE DOW CHEMICAL COMPANY
INTELLECTUAL PROPERTY SECTION
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EXAMINER	
ZALUKAEVA, TATYANA	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## *Office Action Summary*	**Application No.** 10/685,152	**Applicant(s)** SONNENSCHEIN ET AL.
	Examiner Tatyana Zalukaeva	**Art Unit** 1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 6-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 6-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

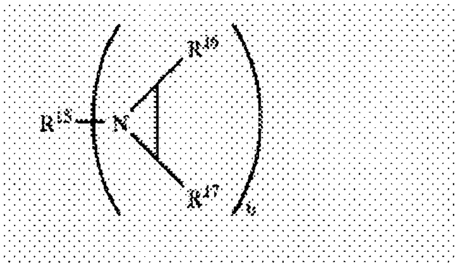
DETAILED ACTION

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-3, 6-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pocius et al (u.S.5,935,711).

With regard to claims 1-3, 5, 11, Pocius discloses a two part polymerizable composition (col.4, lines 8-10) comprising 0.03-1.5% of amine organoborane complex (col.9, lines 1-5 and 20-25), not more than about 50% of a heterocyclic ring opening compound (col.10, lines 47-65 and col. 11, lines 40-45) presented by the formula in col.10, lines 50-55:



which is a compound presented by formula 12 of the instant claim 1. These compounds are contained in the first part of a two part polymerizable composition. The second part of a two part composition contains amine reactive compound in an amount sufficient to liberate the organoborane ***for initiating*** polymerization . Such a compound is a Lewis acid specifically $SnCl_4$ and $TiCl_4$ disclosed in col.12, lines 10-15.

Thus all the component of polymerizable composition are expressly present in Pocius.

The disclosure of Pocius differs from the instant claim 1 by not disclosing specific amount of Lewis acid. However, Pocius, provides a motivation to employ the amount of lewis acid (liberating agent)

a) sufficient to liberate the organoborane for initiating polymerization;

b) the amine reactive compound is employed in an ***effective amount***; that is, an amount effective to ***promote polymerization*** by liberating organoborane from the complex, and if desired, ***reacting with the aziridine-functional material*** to generate a crosslinking agent, but without materially adversely affecting the properties of the ultimate polymerized composition. Larger amounts of amine reactive compound may permit the polymerization to proceed too quickly and, in the case of adhesives, the resulting materials may demonstrate inadequate adhesion to low energy surfaces. Undesirable side reactions that adversely affect the performance properties of the polymerized composition, or an undesirably high level of extractables in the polymerized composition may also result from using large amounts of amine reactive compound. On the other hand, an excess of certain amine reactive compounds may promote adhesion to higher energy surfaces. If small amounts of amine reactive compound are employed, the rate of polymerization may be too slow and the monomers that are being polymerized may not adequately increase in molecular weight and sufficient amounts of an in situ generated crosslinking agent may not form. However, a reduced amount of amine reactive compound may be helpful in slowing the rate of polymerization if it is otherwise too fast.

The instant specification provides for the same used and the amounts of Lewis acids sufficient for the same purposes.

Therefore, it would have been found obvious by a person skilled in the art to utilize the amount of Lewis acid in Pocius, as instantly suggested, because such amount will adequately produce the proper initiating function and maintain the rate of polymerization at the desired level.

Difunctional compounds of claims 7 and 8 in the claimed amounts are disclosed in col.17, lines 13-25.

Specifics of organoborane amine complex of claims 9, 10 are disclosed in col.5 and 6.

With specific regard to claim 12, Pocius teaches that the polymerizable compositions are particularly useful in providing a 100% reactive, two-part, curable ***at room temperature*** adhesive composition (col.4, lines 8-10). With regard to claim 12, Pocius teaches that the bonds will cure to a reasonable green strength to permit handling of the bonded components within about 6 to 7 hours. Full strength will be reached in about 24 hours under ambient conditions; ***post-curing with heat*** (typically about 80C.- col.19, lines 25-35). Limitations of claims 14-19 are disclosed in col.4, lines 33-40, in the paragraph bridging col.17 and 18, Examples, claims 34-41.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tatyana Zalukaeva whose telephone number is (571) 272-1115. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1305. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tatyana Zalukaeva
Primary Examiner
Art Unit 1713

June 20, 2005